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### IAP20Rec'd PCTAPTO 08 MAY 2006

#### IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant:

Steffen Hardt

International Application No.:

PCT/EP2004/012650

International Filing Date:

09 November 2004

For:

METHOD FOR SEPARATING CHEMICAL

SUBSTANCES AND/OR PARTICLES, DEVICE AND

**USE THEREOF** 

Date:

May 8, 2006

Mail Stop PCT Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

#### INFORMATION DISCLOSURE STATEMENT

Sir:

This invention relates to electric fields applied parallel to and/or vertical to the interfaces on adjacent microfluid lamellae made of nonmiscible media containing said biomolecules and bioparticles to which they have different physico-chemical affinities in order to separate biomolecules and bioparticles and the biomolecules and bioparticles are electrophoretically separated.

As authorized and encouraged under 37 C.F.R. §1.97-1.99, applicant hereby cites as a means of complying with the duty of disclosure set forth in 37 C.F.R. §1.56, the following patents and/or documents, required copies enclosed, which the Examiner should consider with respect to the above-identified United States Patent Application:

Receipt date: 05/08/2006 10578602 - GAU: 1795

FOREIGN DOCUMENTS		
PATENT/DOCUMENT NO.	DATE	COUNTRY
37 42 292	06/01/1989	. DE
00/22428	04/20/2000	WIPO
199 30 253	12/28/2000	. DE
694 27 690	05/02/2002	DE
100 63 096	09/12/2002	DE
101 13 257	11/14/2002	DE
03/066191	08/14/2003	WIPO
1 353 172	10/15/2003	EP

#### OTHER PRIOR ART/ARTICLE

- C.W. Theos et al., *Electroextraction Two-Phase Electrophoresis, Applied Biochemistry and Biotechnology*, Vol. 54, (1995), pp. 143-157.
- S. Devasenathipathy, et al., *Electrokenetic Particle Separation*, 7<sup>th</sup> International Conference on Miniaturized Chemical Biochemical Analysis Systems, October 5-9, 2003, pp. 845-848.
- T. Herweck, et al., *Visualization of Flow Patterns and Chemical Synthesis in Transparent Micromixers*, Microreaction Technology, Proceedings of the Fifth International Conference on Microreaction Technology, 2001, pp.215-229.
- V. Reddy, et al., *Organic/Aqueous Two Phase Microflow for Biological Sample Preparation*, 7<sup>th</sup> International Conference on Miniaturized Chemical and Biochemical Analysis Systems, October 5-9, 2003, pp. 437-440.
- C.-L. Liu, et al., *Partitioning of Proteins Using Two-Phase Aqueous Surfactant Systems*, AlChE Journal, April 1995, Vol. 41, No. 4, pp.991-995.
- V.G. Gaikar, et al., *The Effect of Surface Active Additives on the Partitioning of Proteins and Enzymes in Aqueous Two-Phase Systems*, J. Chem. Tech. Biotechnol. , 1996, Vol. 67, pp. 329-332.
- D. Raymond, et al., *Continuous Sample Pretreatment Using a Free-Flow Electrophoresis Device Integrated onto a Silicon Chip*, Analytical Chemistry, 1994, Vol. 66, No. 18, pp. 2858-2864, XP-000478030.
- F. Hachem, et al., *Hydrophobic Partitioning of Proteins in Aqueous Two-Phase Systems*, Enzyme and Microbial Technology, Vol. 19, 1996, pp. 507-517, XP-002316648.

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In accordance with 37 CFR 1.98(a)(2)(i) only the foreign and non-patent documents are required for the express purpose of providing the Patent and Trademark Office with an ample opportunity to evaluate the same and to arrive at an independent assessment of its materiality, if any, with regard to the examination of the application.

An examination of the present application considering the above documents is requested.

Respectfully submitted,

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Attorney Docket No.: FMW-CP-PCT-US

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Sheet 1 of 3 \$@#578602 Form PTO-1449 U.S. Department of Commerce Atty. Docket No.: Patent and Trademark Office FMW-CP-PCT-US LIST OF PRIOR ART CITED BY APPLICANT Applicant: Steffen Hardt (Use several sheets if necessary) Filing Date: May 8, 2006 Group: **U.S. PATENT DOCUMENTS** Examiner Document Date Class Subclass Filing date if Initial Number appropriate AA AΒ AC ΑD ΑE AF AG AΗ ΑI ΑJ AK FOREIGN PATENT DOCUMENTS **Document** Date Country Class Subclass Translation Number Yes No AL37 42 292 06/01/1989 ÐΕ **WIPO** AM 00/22428 04/20/2000 199 30 253 12/28/2000 DE AN 694 27 690 05/02/2002 AO DE ΑP 100 63 096 09/12/2002 DE OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) C.W. Theos et al., Electroextraction Two-Phase Electrophoresis, Applied Biochemistry and Biotechnology, Vol. AR 54, (1995), pp. 143-157. S. Devasenathipathy, et al., Electrokenetic Particle Separation, 7th International Conference on Miniaturized AS Chemical Biochemical Analysis Systems, October 5-9, 2003, pp. 845-848. T. Herweck, et al., Visualization of Flow Patterns and Chemical Synthesis in Transparent Micromixers, Microreaction Technology, Proceedings of the Fifth International Conference on Microreaction Technology, 2002, pp.215-229. DATE CONSIDERED **EXAMINER** 06/14/2010 /Jennifer Dieterle/ \*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in

conformance and not considered. Include copy of this form with next communication to applicant.

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Serial No.: \$00 578 6 02 Form PTO-1449 U.S. Department of Commerce Atty. Docket No.: Patent and Trademark Office **FMW-CP-PCT-US** LIST OF PRIOR ART CITED BY APPLICANT Applicant: Steffen Hardt (Use several sheets if necessary) Filing Date: May 8, 2006 Group: **U.S. PATENT DOCUMENTS** Examiner **Document** Date Name Class Subclass Filing date if Initial Number appropriate AA ΑB AC AD ΑE ΑF AG AH ΑI ΑJ ΑK FOREIGN PATENT DOCUMENTS **Document** Date Country Class Subclass Translation Number Yes No ΑL 101 13 257 11/14/2002 DΕ AM 03/066191 08/14/2003 **WIPO** 1 353 172 10/15/2003 AN ΕP AO ΑP OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) V. Reddy, et al., Organic/Aqueous Two Phase Microflow for Biological Sample Preparation, 7th International AR Conference on Miniaturized Chemical and Biochemical Analysis Systems, October 5-9, 2003, pp. 437-440. C.-L. Liu, et al., Partitioning of Proteins Using Two-Phase Aqueous Surfactant Systems, AIChE Journal, April AS 1995, Vol. 41, No. 4, pp.991-995. V.G. Gaikar, et al., The Effect of Surface Active Additives on the Partitioning of Proteins and Enzymes in Aqueous Two-Phase Systems, J. Chem. Tech. Biotechnol., 1996, Vol. 67, pp. 329-332. **EXAMINER** DATE CONSIDERED /Jennifer Dieterle/ \*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Form PTO-1449 U.S. Department of Commerce Atty. Docket No.: **578602** Patent and Trademark Office FMW-CP-PCT-US LIST OF PRIOR ART CITED BY APPLICANT Applicant: Steffen Hardt (Use several sheets if necessary) Filing Date: May 8, 2006 Group: **U.S. PATENT DOCUMENTS** Filing date if Examiner **Document** Date Name Class Subclass Initial Number appropriate AAAΒ AC AD ΑE ΑF AG AΗ ΑI AJ ΑK **FOREIGN PATENT DOCUMENTS Document** Date Country Class Subclass Translation Number Yes No ΑL ΑM ΑN AO AΡ OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) D. Raymond, et al., Continuous Sample Pretreatment Using a Free-Flow Electrophoresis Device Integrated onto a AR Silicon Chip, Analytical Chemistry, 1994, Vol. 66, No. 18, pp. 2858-2864, XP-000478030. F. Hachem, et al., Hydrophobic Partitioning of Proteins in Aqueous Two-Phase Systems, Enzyme and Microbial AS Technology, Vol. 19, 1996, pp. 507-517, XP-002316648. ΑT **EXAMINER** DATE CONSIDERED /Jennifer Dieterle/ 06/14/2010 \*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.